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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/727,920
Filing Date: December 04, 2003
Appellant(s): BRENNEMAN ET AL.

Kevin M. Pumm
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 12, 2007 appealing from the Office action mailed April 30, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,071,520	Lin et al	12-1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. Claims 1, 3-6, 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al (US 5071520).

Lin discloses a copper base foil having an anti-tarnish coating for improving peel strength (col 1 L 10-11).

The anti-tarnish coating comprised of chromium and chromium oxide (or chromate) (col 3 L 63-65 & col 4 L 13-15 & 25-27). The examiner takes the position that the chromium and chromium oxide (or the anti-tarnish coating) resembles the peel strength enhancement coating of the present invention (col 1 L 10-11).

Furthermore, a silane coupling agent is coated to the anti-tarnish coating (col 4 L 47-49). The coated copper base foil is then bringing into contact with a dielectric support layer (col 1 L 23-25).

Lin teaches the concept of the present invention but is silent about the surface roughness of the copper foil over which the peel strength enhancement coating is coated. Lin also is silent about the thickness of the peel strength enhancement coating.

In view of Lin's teaching, one skill in the art would choose a surface condition of the copper foil and the thickness of the peel enhancement coating because it has been held that the discovery of workable ranges of result-effective variables, such as surface roughness or thickness would be within the ordinary skill of the art.

Regarding to the properties in claim 6 and its dependents, the examiner takes the position that they are inherent, since the prior art meet all the material limitations of the present invention.

(10) Response to Argument

Lin teaches a copper foil with unknown surface roughness value, such copper foil is coated with an anti- tarnish treatment which involves with a chromate which is in the form of dendrites (col 3 L 63-65, col 4 L 13-17, & col 3 L 21-24). After the anti-tarnish treatment, a silane coupling agent is used to treat the anti-tarnish treated surface (col 4 L 46-49). Both the anti-tarnish treatment and the silane coupling agent were to improve peel strength properties (col 1 L 10-11 & col 4 L 48-49). Lin's treated copper foil is then laminated to a dielectric substrate (col 2 L 38-41).

Appellant's invention directed to a copper foil having a surface roughness (R_z) of 1μm which Appellant emphasizes it as a smooth surface. A peel strength enhancement coating is deposited onto the smooth surface, wherein the peel strength enhancement

coating is a metal and metal oxide mixture which could be a chromate from the list of choices (claim 8). Appellant also claiming a silane is deposited onto the peel strength enhancement coating before laminating the copper foil with a dielectric substrate (claim 12).

The only question in dispute is that whether Appellant's invention is obvious over Lin's teaching. Appellant argues that Lin is roughening the copper foil surface, whereas the present invention teaches a smooth surface. The examiner however views "smooth" and "rough" are relative terms, and Lin describes a copper foil similar to that of the appellant's. One of ordinary skill would have found it obvious to determine the range of roughness, including R_z to be about 1 μm.

Appellant's copper foil although is a "smooth" surface, but the step of depositing a peel strength enhancement coating is equivalent to Lin's anti-tarnish treatment. Appellant argues that Lin is roughening the copper foil surface by depositing a plurality of dendrites, the examiner views the present invention of depositing the metal and metal oxide mixture over the copper foil is also a roughening process. It is just a matter of roughening a copper foil with unknown surface roughness or roughening a copper foil having a 1 μm surface roughness. It is most likely that Lin's copper foil has a smooth surface roughness or else it would not need the dendrites and the silane for increasing the peel strength. Therefore, the claims are believed to be proper rejected under 35 USC 103.

Regarding the Affidavit under 37 CFR 1.132 filed on November 22, 2005, there is no clear data showing the peel strength difference between Lin's copper foil and the present invention.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Cathy F. Lam

Cathy Lam

Appeal Conferees:

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Appeal Conferee